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Received January 15, 1772.

XVIII. *An Account of some curious Fishes, sent from Hudson's Bay; by Mr. John Reinhold Forster, F. R. S. in a Letter to Thomas Pennant, Esq; F. R. S.*

DEAR SIR,

Read Jan. 28, 1773. THE Governor and Committee of the Hudson's Bay Company presented the Royal Society with a choice collection of skins of quadrupeds, many fine birds, and some fish, collected by their servants at the several ports in Hudson's Bay; the Committee of the Royal Society, for examining and describing these curiosities, did me the honour to refer them to me for examination. I wish the following observations on the fish, which I take the liberty to address to you, as a lover of Natural History, and my remarks on the birds and quadrupeds, may convey such informations concerning the zoology of North America, in the study of which you have made such vast progress; and so particularize the animals of the *Arctic* part of that vast continent, that nothing further may prevent

your favouring the public with the result of your studies on that subject.

The four kinds of Hudson's Bay fish are the *Sturgeon*, the *Burbot*, the *Gwiniad*, and a new fish called the *Sucker* at Hudson's Bay.

The *Sturgeon* was about fourteen inches long, and therefore seems to be a young fish; as it is likewise observed in the list, written by the Gentleman who sent this fish from York Fort.

DESCRIPTION.

Its nose is very long and slender, terminating in a point; the eyes are small; under the projecting snout, before the mouth, are four beards or *cirri*, placed nearly in the same line, and not by pairs, as in some other species of *Sturgeon*. The mouth is beneath, nearly opposite the eyes, toothless, cartilaginous, *semilunar* when in its natural position, but round when open; on each side are two nostrils. The whole head is depressed, and very nearly quadrangular; the whole body pentagonal, and tapering towards the tail; the whole skin tough, covered with five rows of uncinate scales; the dorsal series consists of fourteen large roundish scales, and a single one behind the dorsal fin; each of the lateral rows has 35 oblique scales; in the two ventral rows are nine roundish strong scales between the pectoral and ventral fins; one scale is behind the vent, and still another behind the anal fin.

The fish, according to this description, seems to come the nearest to that species of *Sturgeon* which I de-

I described in the Philos. Transactions, Vol. LVII. in my *Specimen Historiae Naturalis Volgenfis*, N° 10. under the name of *Acipenser Ruthenus major, rostro elongato acuminato, paululum supino*, and which the Russians call *Sevruga*. Kramer, in his *Elenchus Vegetabilium & Animalium Austriae*, p. 383. is the only writer that I know who takes notice of this species; he calls it *Acipenser rostro acuto, corpore tuberculis spinosis aspero*: the inhabitants of Austria call it *Shirk*, a name they have no doubt borrowed from the Slavonian name *Sevruga*. The famous painter and traveller Cornelis de Bruyn mentions this kind of fish, but in so superficial a manner, that one plainly sees he was little, if at all, used to discussions in points of Natural History. He says, * "the Sterlet is the best fish in Russia; there are two species of it; but, upon the whole, it is nearly related to the Sturgeon. The Severukas differ in nothing from the Sturgeon, which the Russians call *Affetrina*. The Caviar is made from the Beluga, the *Affetrina*, and the *Severuka*." Had de Bruyn examined the *Sevruga*, he would certainly have found it materially different from the *Oestr* or *Affetrina*, i. e. the common blunt-nosed Sturgeon of Germany and the Baltick. I suppose the English Sturgeon, from your own description †, and the drawing in the British Zoology, illustrated by plates, tab. LXXXIX. to be the same with this kind from Hudson's Bay, and with the *Sevruga* of the Russians, and the *Shirk* of the Austrians. The true Sturgeon, which gave

* De Bruyn's Voyage, Tom. I. &c. Amsterd. fol. p. 93.

† Br. Zool. octavo, Vol. III. p. 99.

the name to the whole genus *, I think to be an unknown fish in England. The species of Sturgeons are more numerous than one is at first aware of ; and it would therefore be of some utility, that persons, who have an opportunity of examining all the various kinds at Vienna, and in Russia, might do it with more care than has hitherto been done. Some of the sorts which I have seen, I have so described that they may be known again ; some I did not see, and gave their characters from books, and from the reports of such persons as had examined them. Mr. Klein, a very ingenious naturalist, has enumerated ten Sturgeons, in his 4th *Missus Piscium*, p. 11—16. and Count Marfigli, in his splendid work about the Danube, Tom. IV. gives the names of at least six Sturgeons, but the characters are not sufficiently settled in both these works. Klein saw but two kinds of Sturgeons, and a third in spirits ; and Count Marfigli was not enough of a naturalist to give adequate descriptions of these fish. Therefore it is certain that a careful examination and accurate account of the several species of Sturgeons would greatly illustrate the Natural History of this genus.

The second of the Hudson's Bay fish, is called, by the wild natives of that country, *Marthy*, and is nothing else than our common Burbot, *Gadus Lota*, Linn. only vastly superior in size. The descriptions

* The Germans call this fish *Stoer*, from the old Teutonic word *Stor* or *Stubr*, which signifies *great*, as this fish grows to a very large size. Thus likewise the Scotch call the *Tunny*, *Mac-krel Sture*. Vide Mr. Pennant's *Tour in Scotland*, p. 192.

you have given of this fish, in the British Zoology, is entirely corresponding with this specimen, so that it would be superfluous to presume to make any additions to it. I must, however, observe, that, after a most minute examination, I could find no more than six branchiostegous rays in the two specimens from Hudson's Bay, of which you mention seven. in the English Burbot, and Artedi as many in his specimens. This great naturalist seems likewise to be right, when he observes that the *cirri*, or beards on the end of the nose, are the valves to one of the nostrils; for I found that these beards, on their under-side, opened into a hole, corresponding with the lower nostril. Mr. Andrew Graham, the collector of the Natural History specimens at Severn River in Hudson's Bay, observes, that these fish constantly swim close to the ground, and are extremely voracious; for he represents them as not content with devouring every fish * they can overcome, but likewise feeding on putrefying deer, or other carrion that comes in their way; even stones are sometimes swallowed to satisfy their insatiable appetite, of which Mr. Graham was himself a witness, having taken a stone of a pound weight out of the stomach of this fish. The pike is often obliged to fall a victim, together with the trout, *Tickomeg*, and others, to this rapacious fish. After sunset, it is caught by a night-hook. It does not masticate its food before deglutition. Its roe and liver are reckoned a delicacy, when fresh caught; but they turn rancid and

* This too is the fish that makes such havock in the Lake of Geneva. P.

oily in a few days, though kept frozen solid all the time. At Hudson's Bay this fish is thought to be dry and insipid; its weight is from one to eight pounds.

The third species of fish, from this cold climate, is by the natives called *Tickomeg*, and is our *Gwiniad* or *Salmo Lavaretus*, Linn.; only the size is somewhat bigger, for the greatest specimen sent over measures 18 inches from the head to the tip of the tail, is $4\frac{1}{2}$ inches deep, and not above an inch and $\frac{1}{4}$ thick. This fish differs in no circumstance from our *Gwiniad*, but the length. You mentioned in your British Zoology (Vol. III. p. 269.) a *Ferra* or *Gwiniad* from Switzerland 15 inches long, as an uncommon size *; the Hudson's Bay fish, as I have before observed, is 18 inches long, and $4\frac{1}{2}$ inches its greatest depth. The great abundance of food, and the small number of inhabitants, who let the fish grow up undisturbed, are perhaps the causes of their uncommon bigness. They weigh from $1\frac{1}{2}$ pound to 3 pounds, says Mr. Graham; but, I am sure, the fish I examined must, when fresh, have weighed more. These fish abound in the River Severn in Hudson's Bay, from its origin in the great lakes to its mouth, where it empties itself into the bay. The natives catch five or six hundred a day, by means of wears which they contrive in the river: they will not take bait, and are poor at the breaking of the ice in the river. In the middle of the summer, after a gale of wind,

* However, the *Gwiniads* of Lapland, a similar climate to that of the Hudson's Bay, are vastly large. Brit. Zool. III. 267. note.

they are often found thrown up into the marshes, and on the shoals, where they remain at the recefs of the water and abating of the wind, and serve as food to numbers of crows. The inhabitants of Hudson's Bay think this fish very sweet, and good to eat, contrary to the opinion of many Europeans.

The fourth and last fish brought from Hudson's Bay is there called a *Sucker*, because it lives by suction, according to Mr. Graham's account, who likewise says, that there are two varieties of this fish, both of a whitish colour, but one distinguished by a mixture of beautiful red. In the smallest of two specimens brought over, a broad stripe of red could be observed all along the *linea lateralis*. They are very numerous in the creeks and rivers, and troublesome in overburdening the nets. They are not deemed a palatable food, being very soft, and full of small bones. They weigh from one half to $2\frac{1}{2}$ pounds.

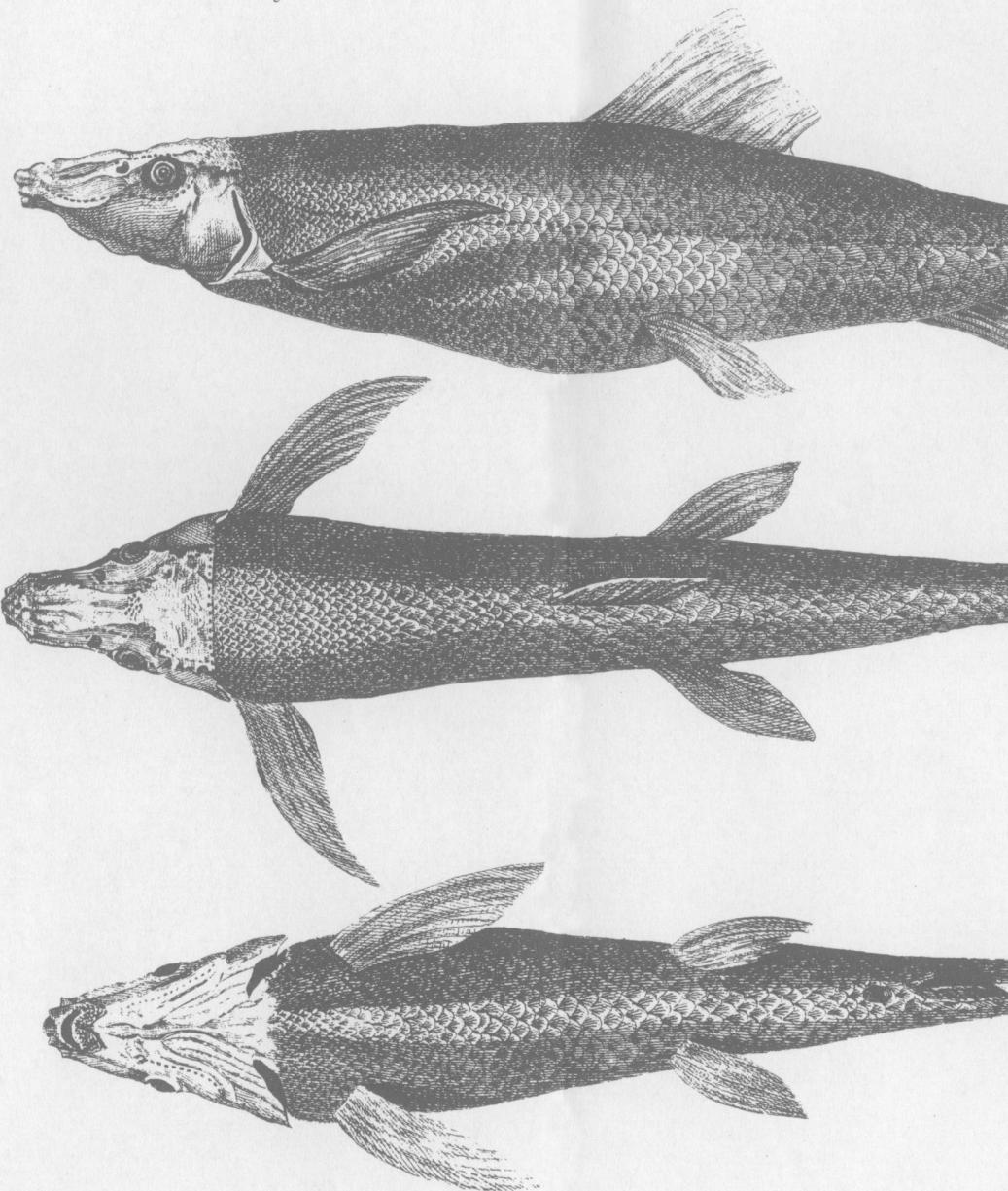
The above is literally what Mr. Graham says of this fish, and all that is known of its natural history. Examining it carefully, I found it was a new species of the genus of *Cyprinus*, or *Carp*.

The head is broader than the body, gradually decreasing towards the nose, full of elevations and tubercles, nearly quadrangular, and not scaly. The mouth is quite under the head, as in the *Loricariæ*, when shut, semilunar; when open, round; not far from the extremity of the snout, and included in small round lips. To the under-lip is fixed a bilobated, beard-like, papillose caruncula; it has no teeth. The

eyes are large, but the colour of the iris could not be determined. The number of the branchiostegous rays is three. The body is flat, tapering towards the tail, and scaly. The greater specimen measures very near 15 inches from the nose to the extremity of the tail; next to the head it is nearly two inches thick, about the dorsal fin $1\frac{1}{4}$ inch; its greatest depth before the ventral fins is $2\frac{1}{2}$ inches. On the snout are about five round prominent tubercles; two nostrils are found on each side, the biggest next before the eye is kidney-shaped. The covers of the gills are double, and divided; the head has several fures; over each eye, in a cavity, are two longitudinal ones, joined opposite the nostrils by a still shorter transverse one; on the covers of the gills are two, on each side one, beginning near the lobes of the caruncula of the under-lip, and going up arched towards the eye. Near the extremity of the snout begins on each side a longitudinal one; it passes under the eye, and mounts in a curvature behind it, then it goes on straight to the end of the head, where it again gets downwards, and joins the lateral line. Where the head joins to the body, these two fures are connected by a transversal one, which, as it were, separates the head from the body. The lateral line at first descends from the head, but then runs on straight, rather nearer the back than the body, to the beginning of the tail. The scales are small near the head and back, increasing in size towards the middle and tail, close to which they are again smaller. The dorsal fin is placed somewhat behind the equilibrium of the fish, rhomboidal, and consisting of twelve strong branched rays. The pectoral fins are lanceo-

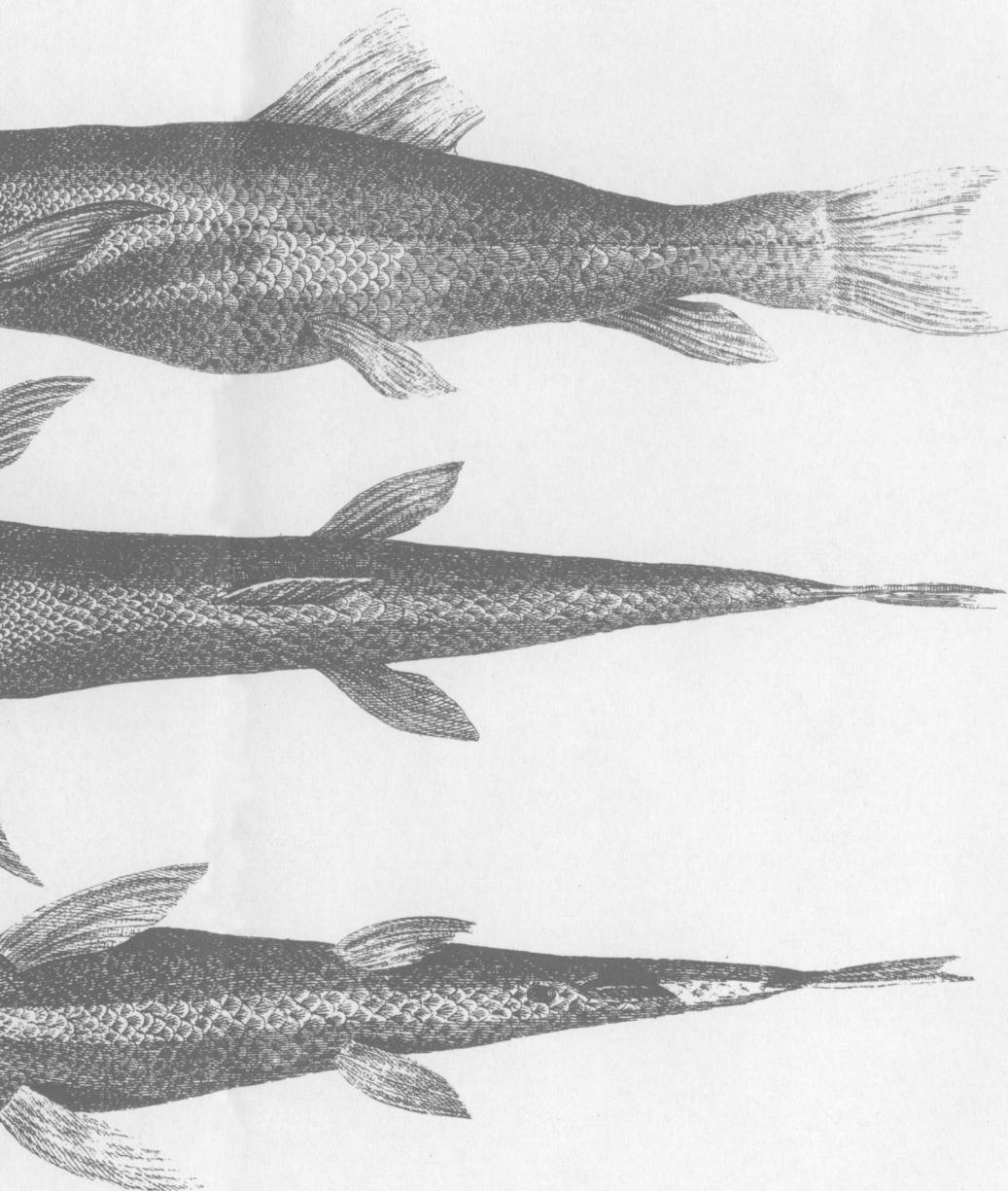
Cyprinus Catostomus.

The Su



Corinus Catostomus.

The Sucker.



lanceolated, fixed under the covers of the gills, and have 17 rays. The ventral fins have 10 or 11 rays, and are placed in the middle of the belly, and under the dorsal fin. The anal fin consists of eight branched strong rays. The tail is somewhat forked or concave, and consists of seventeen rays.

I have been as circumstantial as possible in describing this new species, and join here, together with a drawing [See TAB. VI.], a Latin scientific description of the same.

I am,

With the truest regard,

DEAR SIR,

Your most obedient,

humble servants,

Jn^o Reinhold Forster.

N^o 2, Somerset Stable-yard, Strand,
January 12, 1772.

Katw

Κατω
infra
Στομαος. } CYPRINUS Catostomus.

CYPRINUS pinna ani radiis VIII. labio imo caruncula bilobata papillosa, cauda bifida. Pinnæ D. 12. P. 17. V. 10.—11. A. 8. C. 17. Habitat in Sinus Hudsonis fluminibus copiose, sugenendo pascitur. Anglis, the *Sucker*.

DESCR. *Caput* subtetragonum, versus apicem sensim attenuatum, obtusiusculum, corpore fere crassius, & minus latum.

Tubercula globosa, confertiora in apice rostri, circiter quinque; carinata & acuminata, in vertice sparsa.

Foramina (five nares) gemina, quorum alterum minus, alterum oculis proximum, majus, reniforme.

Oculi magni, ad marginem superficiei verticalis capitis siti, fere in medio inter apicem & basin. *Irides*

Opercula branchiarum magna, nuda; at sub oculis opercula spuria, primo intuitu pro radiis membranæ branchiosæ facile sumenda.

Suturæ in capite plures catenulatæ; una utrinque brevis, supra oculos, naresque, nec basin nec apicem capitis attingens, è regione narium juncta per futuram transversalem brevissimam; secunda utrinque incipiens ad angulum loborum carunculæ,

carunculæ, imo labio adnata, in operculo spurio recurvatur, & prope oculos desinit: tertia utrinque incipiens prope rostri apicem, linea recta sub oculis ducta, dein curvatur & ascendit versus verticem; ibi rursus curvatur & jungitur lineæ laterali, pone aperturam branchialem descendenti: connectuntur hæ duæ lineæ laterales sutura transversa, quæ caput à reliquo corpore distinguunt.

Membrana Branchiostega, radiis tribus brevibus, validis.

Retus inferus, lunulatus, seu semiorbiculatis, labiis inclusus tenuibus, superiore (ore scilicet clauso) concavo, inferiore convexo.

Caruncula lata, labio inferiori adnata, crassiuscula, carnosa, papillis tecta, oris angulos ambiens, medio in lobos binos profunde divisa.

Corpus lateribus compressiusculum, at versus abdomen magis compressum, cuneiforme, capite ad caudam sensim attenuatum, tectum squamis minoribus, ovatis, striatis versus caput minimis, pallide argenteis, in quibusdam circa lineam lateralem aureo-rubris.

Linea lateralis recta, dorso parallela, ad caput super aperturam branchialem ascendens.

Anus

Anus parvus, caudæ multo proprietor quam capiti.

Pinna dorſi pone æquilibrium nonnihil posita, rhomboidalis, radiis validis, ramosif duodecim.

Pinnae pectorales lanceolatæ, infra opercula fitæ radiis 17 longitudine partem quartam totius piscis (exclusis capite & caudâ) æquant.

Pinnae ventrales radiis 10 vel 11 oblongæ, in medio ventris, sub pinna dorſali posita, pinna pectorali dimidio breviores.

Pinna ani caudæ propinquæ, longitudine fere pinnæ pectoralis, radiis octo validis, ramosif.

Cauda leviter bifurca, pinnam pectoralem longitudine & numero radiorum æquans.

Longitudo totius piscis unciarum 15 pedis Anglicani.

Latitudo unciarum circiter 3 ante pinnas ventrales.

Craſſities corporis prope caput unciarum fere 2, ante pinnam dorſalem unciæ & quadrantis.

P. S. Besides the above-mentioned fish, the servants of the Hudson's Bay Company have likewise sent over from thence the common *River Crayfish* (*Cancer Astacus*, *Linn.*), which, in every particular, corresponds with the English one.